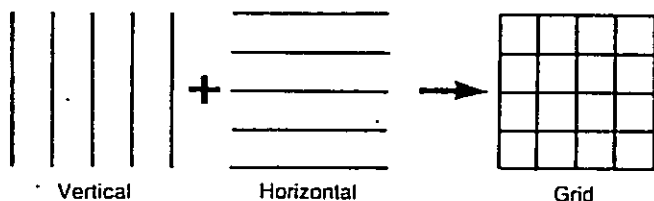


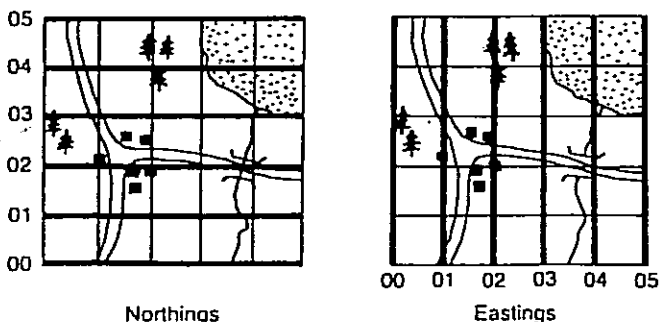
15 Grid references

15.1 Choose three features on the topographic map on page 50. Write a couple of sentences describing as accurately as possible the location of each. Pass your descriptions on to a friend and see how long he or she takes to find the three features you chose. (If you like, you can make this a competition amongst your classmates.)

A map is of little use unless you can easily locate places or features on it. A simple and accurate method for finding features on a map is to use grid references. A *grid* is a network of intersecting parallel lines. One set of lines is horizontal and the other set is vertical.



When a grid is drawn on a map, the horizontal lines are called *northings* and the vertical lines are called *eastings*.

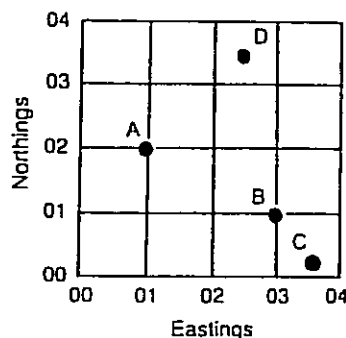


Eastings are numbered from west to east (left to right). See, for example, in the diagram above, how easting 04 is further *east* than easting 02.

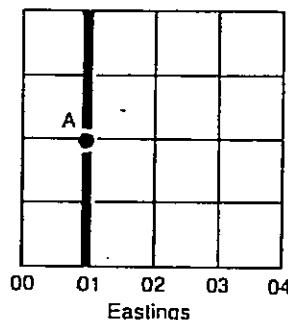
Northings are numbered from south to north (bottom to top). In the example above, northing 03 is further *north* than northing 01.

Places or features on a map can be located by referring to the grid on the map. A grid reference usually consists of six figures, such as 010020. The first three figures (010) refer to the eastings and the last three figures (020) refer to the northings. See the diagrams below for an explanation of how a grid reference is made up.

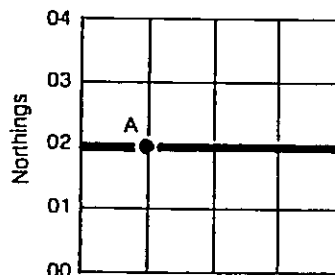
Example 1



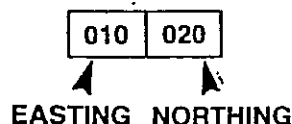
A is exactly on easting 01, so its easting reference is 010.



A is exactly on northing 02, so its northing reference is 020.



Therefore the grid reference is 010020.



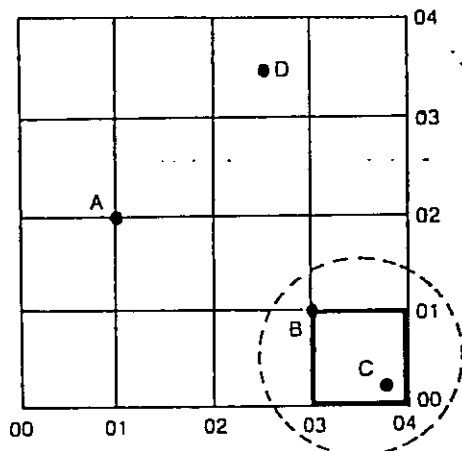
Example 2

The grid reference for B in the grid above is 030010. This means that B is located exactly on easting 03, and exactly on northing 01.

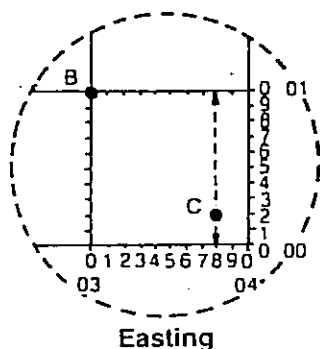
You may have noticed in these two examples that the reference for the easting is given *before* the reference for the northing. Grid references must *always* be given in this order to avoid confusion. To help you remember this, 'E' comes before 'N' in the alphabet, so eastings come before northings.

Example 3

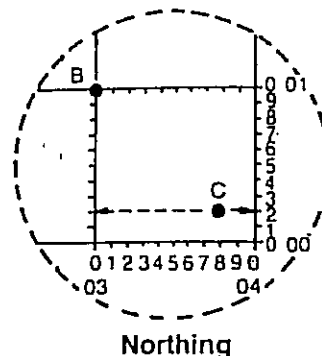
The point C in the grid below is not located exactly on the grid lines as A and B were.



- 1 Imagine that the sides of the grid square that contains C are divided up into tenths. (See the diagrams of the square below which have been enlarged.)
- 2 Easting: Counting from west to east (from left to right) C lies eight tenths along from easting 03, so the easting reference is given as 038.



- 3 Northing: Counting from south to north (from bottom to top) C lies two tenths along from northing 00, so the northing reference is given as 002.



- 4 Therefore the full grid reference for C is 038002.

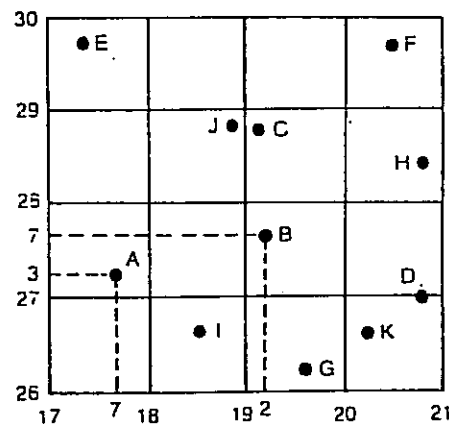
Example 4

The grid reference for D is 025035. This means that the point is 5/10ths along from easting 02, and 5/10ths along from northing 03.

15.2 Write down the grid references for the points lettered C to H on the grid below. A and B have been done for you.

A = 177273

B = 192277



15.3 Which of the following grid references for the points I, J and K on the grid above is incorrect?

I = 185257

J = 188258

K = 267202

Explain what the error is.

15.4 Refer to the Port Moresby map on page 50. What is a person's job likely to be if he or she is employed at the following places?

- 172590
- 228696
- 237559
- 216731
- 165524
- 245650
- 180638
- 238627
- 175601
- 211572

15.5 Imagine that you are a doctor and you have been called to examine dead bodies at the following locations around Port Moresby. What would be the likely cause of death in each case? Study the features of the area carefully before making your decision. What evidence led you to your decision?

- 161634
- 241680
- 193567
- 149553
- 213506
- 248550

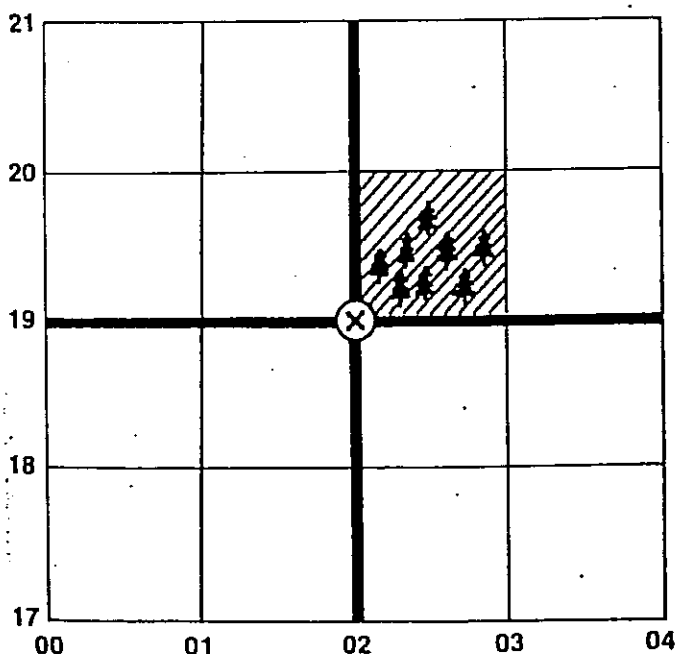
Four-figure area references

In the examples above, the grid references have been accurate to within 100 metres. There are times, however, when it is not necessary to give such a precise position to describe the location of a feature. For example, a large area of forest may nearly fill one or more grid squares. Obviously no one point would give the forest's location. In this case a four-figure area reference should be used, rather than the standard six-figure reference.

A four-figure area reference refers to a complete grid square and not just one particular point within the square. To give a four-figure reference for a grid square you give the numbers of the easting and the number of the northing which intersect at the bottom left-hand corner of the square.

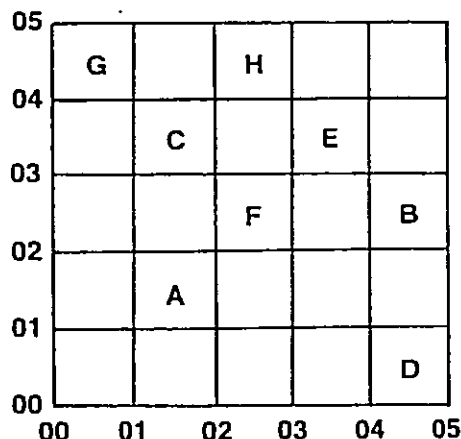
Example

On the diagram below, the forest is located in grid square 02 19
easting northing



= Forest

The area reference is actually that of the point on the map at the bottom left-hand corner of the grid square. The rule of easting before northing still applies, 02 being the easting number, and 19 the northing number.



15.6 Give area references for each of the grid squares above which contain a letter, e.g. H = 0204

15.7 Refer to the Bega Valley map on page 67. Give the four-figure area references for the following features:

- the main part of Tathra township
- the eastern part of Blackfellows Lagoon
- Kalaru village
- Moon Bay.

15.8 Give six-figure grid references to describe the location of:

- Tathra Wharf
- Bournda Island
- the main intersection in Bega town
- the lookout near the highway north of Bega
- the bridge at Frogs Hollow.

Date: _____

GRID Referencing : Worksheet

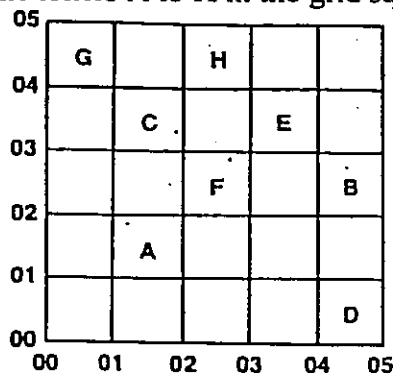
Instructions: Refer to your notes to answer the following questions.

1. Why is it important to be able to find features on a map?

2. What method do we use in order to find places on a map? _____
3. What is a GRID? _____
4. The horizontal lines are called : _____ and the vertical lines are called _____.
5. If the grid reference is 170010, what does this mean about the point we are locating?
- 6a. What direction **MUST ALWAYS** go first when referring to grid points? _____
- b. What is an easy way to remember which direction goes first? _____

7. Give 4 - figure AREA references for the letters A to H in the grid squares found in the example below.

- A = _____
 B = _____
 C = _____
 D = _____
 E = _____
 F = _____
 G = _____
 H = _____



8. Write down the grid references for the points lettered C to K on the grid below. A and B have been done for you. A = 177273 B = 192277

- C = _____
 D = _____
 E = _____
 F = _____
 G = _____
 H = _____
 I = _____
 J = _____
 K = _____

